



Vibrio parahaemolyticus strains isolated during investigation of the summer 2006 seafood related diarrhea outbreaks in two regions of Chile

Author(s): Fuenzalida L, Armijo L, Zabala B, Hernández C, Rioseco ML, Riquelme C, Espejo RT
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Abstract:

Nine hundred cases of seafood related diarrhea were reported in the region of Puerto Montt, Chile during the austral summer of 2006. This is the continuation of the large outbreaks associated with the consumption of seafood containing the *Vibrio parahaemolyticus* serovar O3:K6 pandemic clonal group that arose last decade in Chile. The initial outbreaks occurred during the summer of 1998 in Antofagasta (23 degrees 39'S 70 degrees 24'W). Subsequently, outbreaks there were rare, but since 2004 outbreaks have been frequent farther south in Puerto Montt (41 degrees 29'S 72 degrees 24'W). The large outbreaks in Puerto Montt and their rarity in Antofagasta is atypical because the seawater temperature at Puerto Montt is 5 degrees C lower than at Antofagasta and the presence of *V. parahaemolyticus* in seafood has been associated with higher water temperatures. To better understand the role of seafood in outbreak occurrences in these regions, we analyzed the *V. parahaemolyticus* populations in clinical cases and shellfish from Puerto Montt during diarrhea outbreaks in 2006 and in shellfish from Antofagasta, where no cases were observed. Enrichment culture from shellfish yielded no *V. parahaemolyticus* from samples from the north, but its presence was detected in 80% of the samples from the south. Grouping of the *V. parahaemolyticus* isolates by the fragment restriction pattern of their DNA showed that all pathogenic (tdh+) isolates obtained from Puerto Montt shellfish corresponded to the serovar O3:K6 South East Asian pandemic clone, while the non-pathogenic (tdh-) isolates corresponded to at least six discrete groups. The possible causes for the disappearance of the pandemic strain from the north and its persistence in the south are discussed.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Quality, Food/Water Quality

Food/Water Quality: Pathogen, Other Water Quality Issue

Water Quality (other): Sea surface temperature

Geographic Feature:

resource focuses on specific type of geography

Climate Change and Human Health Literature Portal

Ocean/Coastal

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Central/South America

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Vibrios, Other Diarrheal Disease

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified